

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

B040008WO01-

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/000951

International filing date (day/month/year)

26.01.2005

Priority date (day/month/year)

04.02.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant

KANEKA CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

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Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☒ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☒ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☒ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1-11, 15

YES

Claims 12-14, 16

NO

Inventive step (IS)

Claims 1-11, 15

YES

Claims 12-14, 16

NO

Industrial applicability (IA)

Claims 1-16

YES

Claims

NO

2. Citations and explanations:

Document 1:

JP 2843596 B2 (Kyowa Hakko Kogyo Co., Ltd.), 06 January 1999

Document 2:

JP 7-106149 B2 (Sagami Chemical Research Center), 15 November 1995

Document 3:

A. OZEKI et al., "Enzymatic production of D-alanine from DL-alaninamide by novel D-alaninamide specific amide hydrolase,"

Biosci. Biotech. Biochem., 1992 Dec., Vol. 56, No. 12, pp. 1980-1984

Document 4:

Y. ASANO et al., "Purification and characterization of amidase which participates in nitrile degradation,"

Agric. Biol. Chem., 1982, Vol. 46, No. 5, pp. 1175-1181

Claims 12-14 and 16

The inventions described in claims 12-14 and 16 do not appear to be novel or to involve an inventive step based on documents 1-4 cited in the ISR.

Documents 1-4 describe microorganisms belonging to the genus *Arthrobacter* and methods of manufacturing amidases by culturing these microorganisms. The amidases produced by the microorganisms described in documents 1-4 are not specified in terms of amino acid sequence, but the microorganisms described in claim 12 and documents 1-4 cannot be distinguished as things because they all belong to the genus *Arthrobacter* which produces amidase.

(Continued)

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Regarding the “specific strain” of claim 13, the specification does not contain any specific description regarding the nature of this “specific strain”, and it is unclear whether or not this is a microorganism that produces an amidase having properties equivalent to those of the amidase produced by the KNK1101J strain.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V.2

Claims 1-11 and 15

The inventions described in claims 1-11 and 15 appear to be novel and to involve an inventive step over the documents cited in the ISR.

The documents cited in the ISR neither describe nor suggest an amidase consisting of the amino acid sequence represented by SEQ ID NO:1 of the present application which stereospecifically hydrolyzes D-phenylalaninamide, nor was this technical common knowledge before the priority date for this application. Moreover, no amidase having strong homology with the amino acid sequence represented by SEQ ID NO:1 of the present application was known before the priority date for this application. Moreover, in terms of their physiochemical properties, the purified amidases described in documents 1, 3 and 4 are also found to be all different proteins from the amidase consisting of the amino acid sequence represented by SEQ ID NO:1 of the present application.